What is claimed is:

1. A breathable gas mask arrangement, comprising:

a mask shell having a portion adapted to receive a supply of pressurized breathable gas and a user side;

a gusset portion having a first side attached to the user side of the shell and having a second side;

a cushion having a first portion constructed and arranged to attach to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask arrangement and the user's face; and

a headgear constructed and arranged to attach the mask shell to the user;

wherein, the gusset portion is constructed and arranged such that it can expand and contract to alter a distance between the mask shell and the cushion, an interior of the gusset portion being exposed to the supply of pressurized breathable gas and having a projected area on the user's face A_g which is greater than an area A_c of contact of the cushion with the user's face such that the supply of pressurized breathable gas acting on the area A_g provides a component of a contact force F_c of the cushion on the user's face, and a ratio of A_g/A_c is at least 1.30.

2. A breathable gas mask arrangement as in claim 1, wherein the ratio of A_g/A_c is in a range of 1.50 to 5.00.

3. A breathable gas mask arrangement as in claim 2, wherein the ratio of A_g/A_c is in a range of 2.00 to 4.00.

4. A breathable gas mask arrangement as in claim 3, wherein the ratio of A_g/A_c is in a range of 2.25 to 3.50.

5. A breathable gas mask arrangement as in claim 1, wherein the gusset portion can expand and contract to alter the distance between the mask shell and the cushion by at least 15 mm.

6. A breathable gas mask arrangement as in claim 5, wherein the gusset portion can expand and contract to alter the distance between the mask shell and the cushion by at least 20 mm.

7. A breathable gas mask arrangement as in claim 1, wherein the gusset portion includes a single gusset having a flexible sidewall with a generally triangular cross-section when not exposed to the supply of pressurized breathable gas that balloons to a generally rounded cross-section when exposed to the supply of pressurized breathable gas.

8. A breathable gas mask arrangement as in claim 7, wherein the gusset portion includes a plurality of interconnected gussets having flexible sidewalls with generally triangular cross-sections when not exposed to the supply of pressurized breathable gas that balloon to generally rounded cross-sections when exposed to the supply of pressurized breathable gas.

9. A breathable gas mask arrangement as in claim 1, wherein the gusset portion includes a plurality of sequentially interconnected steps moving from larger to smaller in area between the first and second sides of the gusset portion, respectively.

10. A breathable gas mask arrangement as in claim 1, wherein the mask shell includes an axially extending cylinder portion and the gusset portion is in the form of a piston axially slideably engaged with the cylinder portion of the mask shell.

11. A breathable gas mask arrangement as in claim 10, and further including a spring engaged between the mask shell and the piston to apply a retracting force between the mask shell and the piston.

12. A breathable gas mask arrangement as in claim 11, wherein the mask shell includes a stop portion for engaging the piston to limit axial movement of the piston.

13. A breathable gas mask arrangement as in claim 1, wherein the gusset portion includes a plurality of interconnected gussets, at least two of the gussets having differently sized areas exposed to the supply of pressurized breathable gas.

14. A breathable gas mask arrangement as in claim 1, wherein the gusset portion includes a sidewall having a thickened cross-section at a base of the sidewall.

15. A breathable gas mask arrangement as in claim 14, wherein the thickened portion has a generally uniform thickness.

16. A breathable gas mask arrangement as in claim 14, wherein the gusset portion includes a sidewall having a cross-sectional thickness tapering from a thickened base portion to a thinner portion.

17. A breathable gas mask arrangement as in claim 1, and further including a generally rigid backstop attached to the mask shell for contacting a first sidewall portion of the gusset portion to limit movement of the first sidewall portion.

18. A breathable gas mask arrangement as in claim 17, wherein the generally rigid backstop extends around substantially an entire periphery of the gusset portion.

19. A breathable gas mask arrangement as in claim 18, and further including a generally rigid second backstop attached to the mask shell for contacting a second sidewall portion of the gusset portion to limit movement of the second sidewall portion.

20. A breathable gas mask arrangement as in claim 1, wherein the mask shell further includes a baffle disposed in an interior of the mask shell between a mask gas intake and a mask exhaust vent to deflect gas from the intake from directly flowing to the exhaust vent.

21. A breathable gas mask arrangement as in claim 20, wherein the baffle is in the form of a flat plate tilted away from a horizontal axis of the mask.

22. A breathable gas mask arrangement as in claim 1, wherein the gusset portion has a flexible sidewall with a generally circular cross-section enclosing an interior volume and at least one port connecting the interior volume of the gusset portion to the supply of pressurized breathable gas.

23. A mask for delivering breathable gas to a patient, comprising:

a mask shell having a portion adapted to receive a supply of pressurized breathable gas and a user side;

a gusset portion having a first side attached to the user side of the shell and having a second side;

a cushion having a first portion constructed and arranged to attach to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask and the user's face; and

a headgear constructed and arranged to attach the mask shell to the user;

wherein, the gusset portion is constructed and arranged such that it can expand and contract within a range of displacement to alter a distance between the mask shell and the cushion, the gusset portion defining a gusset area exposed to the supply of pressurized breathable gas in use such that the supply of pressurized breathable gas acting on the gusset area provides a component of a contact force F_c of the cushion on the user's face, the force F_c being maintained in approximately constant proportion to the supply of pressurized breathable gas and a total force of the mask on the face F_m being maintained within a range of about 35 - 108 grams per gf/cm^2 pressure of the supply of pressurized breathable gas over an operating pressure range of the mask.

24. A mask for delivering breathable gas to a patient as in claim 23, wherein the force F_m is maintained within a range of about 40 – 88 grams per gf/cm^2 pressure of the supply of pressurized breathable gas.

25. A mask for delivering breathable gas to a patient as in claim 24, wherein the force F_m is maintained within a range of about 50 – 88 grams per gf/cm^2 pressure of the supply of pressurized breathable gas.

26. A mask for delivering breathable gas to a patient as in claim 25, wherein the operating pressure range is about 4-25 gf/cm^2.

27. A mask for delivering breathable gas to a patient as in claim 26, wherein the expansion and contraction of the gusset portion permits a seal to be maintained between the cushion and the user's face within a range of about plus and minus 8 degrees angular displacement of the mask shell with respect to the user's face.

28. A breathable gas mask arrangement as in claim 23, wherein the gusset portion includes a single gusset having a flexible sidewall with a generally triangular cross-section when not exposed to the supply of pressurized breathable gas that balloons to a generally rounded cross-section when exposed to the supply of pressurized breathable gas.

29. A breathable gas mask arrangement as in claim 23, wherein the gusset portion includes a sidewall having a thickened cross-section at a base of the sidewall.

30. A breathable gas mask arrangement as in claim 29, wherein the thickened portion has a generally uniform thickness.

31. A breathable gas mask arrangement as in claim 29, wherein the gusset portion includes a sidewall having a cross-sectional thickness tapering from a thickened base portion to a thinner portion.

32. A breathable gas mask arrangement as in claim 23, and further including a generally rigid backstop attached to the mask shell for contacting a first sidewall portion of the gusset portion to limit movement of the first sidewall portion.

33. A breathable gas mask arrangement as in claim 32, wherein the generally rigid backstop extends around substantially an entire periphery of the gusset portion.

34. A mask for delivering breathable gas to a patient, comprising:

a mask shell having a portion adapted to receive a supply of pressurized breathable gas and a user side;

a gusset portion having a first side attached to the user side of the shell and having a second side;

a cushion having a first portion constructed and arranged to attach to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask and the user's face; and

a headgear constructed and arranged to attach the mask shell to the user;

wherein, the gusset portion is constructed and arranged such that it can expand and contract within a range of displacement to alter a distance between the mask shell and the cushion, the gusset portion defining a gusset area exposed to the supply of pressurized breathable gas in use such that the supply of pressurized breathable gas acting on the gusset area provides a component of a contact force F_c of the cushion on the user's face, the force F_c being maintained within a range of about 8 – 61 grams per gf/cm^2 pressure of the supply of pressurized breathable gas over an operating pressure range of about 4-25 gf/cm^2.

35. A mask for delivering breathable gas to a patient as in claim 34, wherein the force F_c is maintained within a range of about 27 – 61 grams per gf/cm^2 pressure of the supply of pressurized breathable gas.

36. A mask for delivering breathable gas to a patient as in claim 35, wherein the force F_c is maintained within a range of about 40 – 61 grams per gf/cm^2 pressure of the supply of pressurized breathable gas.

37. A mask for delivering breathable gas to a patient as in claim 36, wherein a total force of the mask on the face F_m is maintained within a range of about 35-88 grams per gf/cm^2 pressure of the supply of pressurized breathable gas over the operating pressure range of the mask.

38. A mask for delivering breathable gas to a patient as in claim 37, wherein the force F_m is maintained within a range of about 40-88 grams per gf/cm^2 pressure of the supply of pressurized breathable gas.

39. A mask for delivering breathable gas to a patient as in claim 38, wherein the force F_m is maintained within a range of about 50-88 grams per gf/cm^2 pressure of the supply of pressurized breathable gas.

40. A mask for delivering breathable gas to a patient as in claim 39, wherein the expansion and contraction of the gusset portion permits a seal to be maintained between the

cushion and the user's face within a range of about plus and minus 8 degrees angular displacement of the mask with respect to the user's face.

41. A breathable gas mask arrangement as in claim 34, wherein the gusset portion includes a single gusset having a flexible sidewall with a generally triangular cross-section when not exposed to the supply of pressurized breathable gas that balloons to a generally rounded cross-section when exposed to the supply of pressurized breathable gas.

42. A breathable gas mask arrangement as in claim 34, wherein the gusset portion includes a sidewall having a thickened cross-section at a base of the sidewall.

43. A breathable gas mask arrangement as in claim 42, wherein the thickened portion has a generally uniform thickness.

44. A breathable gas mask arrangement as in claim 42, wherein the gusset portion includes a sidewall having a cross-sectional thickness tapering from a thickened base portion to a thinner portion.

45. A breathable gas mask arrangement as in claim 34, and further including a generally rigid backstop attached to the mask shell for contacting a first sidewall portion of the gusset portion to limit movement of the first sidewall portion.

46. A breathable gas mask arrangement as in claim 45, wherein the generally rigid backstop extends around substantially an entire periphery of the gusset portion.

47. A breathable gas mask arrangement, comprising:

a mask shell having a portion adapted to receive a supply of pressurized breathable gas and a user side;

a gusset portion having a first side attached to the user side of the shell and having a second side;

a cushion having a first portion constructed and arranged to attach to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask arrangement and the user's face; and

a headgear constructed and arranged to attach the mask shell to the user;

wherein, the gusset portion is constructed and arranged such that it can expand and contract to alter a distance between the mask shell and the cushion, an interior of the gusset portion being exposed to the supply of pressurized breathable gas and having a projected area on the user's face A_g which is greater than an area A_c of contact of the cushion with the user's face such that the supply of pressurized breathable gas acting on the area A_g provides a component of a contact force F_c of the cushion on the user's face, and a ratio of A_g/A_c is greater than 1.00, a change in total force of the mask on the face F_m being generally directly proportional at a given operating pressure to a displacement of the mask shell toward the user's face from an initial seal position within a range of such mask shell displacement of about 6-25 mm.

48. A breathable gas mask arrangement as in claim 47, wherein the mask shell displacement is in a range of about 10-20 mm.

49. A breathable gas mask arrangement as in claim 48, wherein the ratio of A_g/A_c is in a range of 1.50 – 4.00.

50. A breathable gas mask arrangement as in claim 49, wherein the gusset portion includes a single gusset having a flexible sidewall with a generally triangular cross-section when not exposed to the supply of pressurized breathable gas that balloons to a generally rounded cross-section when exposed to the supply of pressurized breathable gas.

51. An apparatus for disposition between a mask shell and a face-contacting cushion of a breathable gas mask arrangement adapted to receive a supply of pressurized breathable gas, comprising:

a gusset portion having a first side attachable to a user side of the mask shell and a second side attachable to the cushion;

wherein, the gusset portion is constructed and arranged such that it can expand and contract to alter a distance between the mask shell and the cushion, an interior of the gusset portion being exposed to the supply of pressurized breathable gas and having a projected area on the user's face A_g which is greater than an area A_c of contact of the cushion with the user's face such that the supply of pressurized breathable gas acting on the area A_g provides a component of a contact force F_c of the cushion on the user's face, and a ratio of A_g/A_c is at least 1.30.

52. An apparatus as in claim 51, wherein the ratio of A_g/A_c is in a range of 1.50 to 5.00.

53. An apparatus as in claim 52, wherein the ratio of A_g/A_c is in a range of 2.00 to 4.00.

54. An apparatus as in claim 53, wherein the ratio of A_g/A_c is in a range of 2.25 to 3.50.

55. A breathable gas mask arrangement as in claim 53, wherein the gusset portion includes a single gusset having a flexible sidewall with a generally triangular cross-section when not exposed to the supply of pressurized breathable gas that balloons to a generally rounded cross-section when exposed to the supply of pressurized breathable gas.

56. A cushion assembly for attachment to a mask shell of a breathable gas mask arrangement adapted to receive a supply of pressurized breathable gas, comprising:

a gusset portion having a first side attachable to a user side of the mask shell and having a second side;

a cushion having a first portion attached to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask arrangement and the user's face; and

wherein, the gusset portion is constructed and arranged such that it can expand and contract to alter a distance between the mask shell and the cushion, an interior of the gusset portion being exposed to the supply of pressurized breathable gas and having a projected area on the user's face A_g which is greater than an area A_c of contact of the cushion with the user's face such that the supply of pressurized breathable gas acting on the area A_g provides a component of a contact force F_c of the cushion on the user's face, and a ratio of A_g/A_c is at least 1.30.

57. A cushion assembly as in claim 56, wherein the ratio of A_g/A_c is in a range of 1.50 to 5.00.

58. A cushion assembly as in claim 57, wherein the ratio of A_g/A_c is in a range of 2.00 to 4.00.

59. A cushion assembly as in claim 58, wherein the ratio of A_g/A_c is in a range of 2.25 to 3.50.

60. A breathable gas mask arrangement as in claim 58, wherein the gusset portion includes a single gusset having a flexible sidewall with a generally triangular cross-section when not exposed to the supply of pressurized breathable gas that balloons to a generally rounded cross-section when exposed to the supply of pressurized breathable gas.

61. A mask assembly for supplying pressurized breathable gas to a user, comprising:

a mask shell having a portion adapted to receive the pressurized breathable gas;

a cushion having a portion for contacting a user's face in use and providing a seal between the mask assembly and the user's face;

a suspension mechanism attached between the mask shell and the cushion; and

a headgear for attaching the mask shell to the user;

wherein, the suspension mechanism is constructed and arranged such that it can expand and contract to alter a distance between the mask shell and the cushion, an interior of the suspension mechanism being exposed to the pressurized breathable gas and having a projected area on the user's face A_g which is greater than an area A_c of contact of the cushion with the user's face such that the pressurized breathable gas acting on the area A_g provides a component of a contact force F_c of the cushion on the user's face, and a ratio of A_g/A_c is at least 1.30.

62. A mask assembly as in claim 61, wherein the ratio of A_g/A_c is in a range of 1.50 to 5.00.

63. A mask assembly as in claim 62, wherein the ratio of A_g/A_c is in a range of 2.00 to 4.00.

64. A mask assembly as in claim 63, wherein the ratio of A_g/A_c is in a range of 2.25 to 3.50.

65. A breathable gas mask arrangement as in claim 63, wherein the gusset portion includes a single gusset having a flexible sidewall with a generally triangular cross-section when not exposed to the pressurized breathable gas that balloons to a generally rounded cross-section when exposed to the pressurized breathable gas.

66. A mask for delivering breathable gas to a patient, comprising:

a mask shell having a portion adapted to receive a supply of pressurized breathable gas and a user side;

a gusset portion having a first side attached to the user side of the shell and having a second side;

a cushion having a first portion constructed and arranged to attach to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask and the user's face; and

a headgear constructed and arranged to attach the mask shell to the user;

wherein, the gusset portion is constructed and arranged such that it can expand and contract within a range of displacement to alter a distance between the mask shell and the cushion, the gusset portion having a gusset area exposed to the supply of pressurized breathable gas in use such that the supply of pressurized breathable gas acting on the gusset

area provides a component of a contact force F_c of the cushion on the user's face, the force F_c being maintained within a range of about 0.3 – 4 grams per gf/cm^2 pressure of the supply of pressurized breathable gas per linear centimeter around a circumference of the cushion in contact with the user's face over an operating pressure range of about 4-25 gf/cm^2.

67. A mask for delivering breathable gas to a patient as in claim 66, wherein the force F_c is maintained within a range of about 0.5 – 4 grams per gf/cm^2 pressure of the supply of pressurized breathable gas per linear centimeter around a circumference of the cushion in contact with the user's face.

68. A mask for delivering breathable gas to a patient as in claim 67, wherein the force F_c is maintained within a range of about 1 – 3 grams per gf/cm^2 pressure of the supply of pressurized breathable gas per linear centimeter around a circumference of the cushion in contact with the user's face.

69. A mask for delivering breathable gas to a patient as in claim 68, wherein the force F_c is maintained within a range of about 1.5 – 3 grams per gf/cm^2 pressure of the supply of pressurized breathable gas per linear centimeter around a circumference of the cushion in contact with the user's face.

70. A mask for delivering breathable gas to a patient as in claim 69, wherein a total force of the mask on the face F_m is maintained within a range of about 35-88 grams per gf/cm^2 pressure of the supply of pressurized breathable gas over the operating pressure range of the mask.

71. A mask for delivering breathable gas to a patient as in claim 70, wherein the force F_m is maintained within a range of about 40-88 grams per gf/cm^2 pressure of the supply of pressurized breathable gas.

72. A mask for delivering breathable gas to a patient as in claim 71, wherein the force F_m is maintained within a range of about 50-88 grams per gf/cm^2 pressure of the supply of pressurized breathable gas.

73. A mask for delivering breathable gas to a patient as in claim 72, wherein the expansion and contraction of the gusset portion permits a seal to be maintained between the cushion and the user's face within a range of about plus and minus 8 degrees angular displacement of the mask with respect to the user's face.

74. A breathable gas mask arrangement as in claim 72, wherein the gusset portion includes a single gusset having a flexible sidewall with a generally triangular cross-section when not exposed to the supply of pressurized breathable gas that balloons to a generally rounded cross-section when exposed to the supply of pressurized breathable gas.

75. A mask assembly attachable to a user for receiving and supplying pressurized air to the user, comprising:

a cushion for contacting a user's face; and

a suspension mechanism axially movably supporting the cushion and exposed to the pressurized air to provide a first axial spring force to the cushion proportional to a pressure of the air, the first axial spring force being at least 30% greater than a second axial spring force on the cushion due to the pressurized air acting directly on the cushion.

76. A mask assembly as in claim 75, wherein the first axial spring force is between 200% and 400% greater than the second axial spring force.

77. A mask assembly as in claim 76, wherein the suspension mechanism includes at least one gusset having a flexible sidewall with a generally triangular cross-section when not exposed to the pressurized air that balloons to a generally rounded cross-section when exposed to the pressurized air.

78. A mask assembly attachable to a user for receiving and supplying pressurized air to the user, comprising:

a mask shell;

a cushion for contacting a user's face and having a first projected area on the user's face; and

a suspension mechanism attached to the mask shell axially movably supporting the cushion and having a second projected area on the user's face greater than the first projected area on the face by at least 30%.

79. A mask assembly as in claim 78, wherein the second projected area is between 200% and 400% greater than the first projected area.

80. A mask assembly as in claim 79, wherein the suspension mechanism includes at least one gusset having a flexible sidewall with a generally triangular cross-section when not exposed to the pressurized air that balloons to a generally rounded cross-section when exposed to the pressurized air.

81. A breathable gas mask arrangement, comprising:

a mask shell having a portion adapted to receive a supply of pressurized breathable gas, and a cylinder portion axially extending on a user side;

a gusset portion having a first side in the form of a piston axially slideably engaged with the cylinder portion of the mask shell and a second side;

a cushion having a first portion constructed and arranged to attach to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask arrangement and the user's face; and

a headgear constructed and arranged to attach the mask shell to the user;

wherein, the piston can axially slide in the cylinder portion of the mask shell to alter a distance between the mask shell and the cushion, a surface of the piston being exposed to the supply of pressurized breathable gas and having a projected area on the user's face A_g which is greater than an area A_c of contact of the cushion with the user's face such that the supply of pressurized breathable gas acting on the area A_g provides a component of a contact force F_c of the cushion on the user's face, and a ratio of A_g/A_c is greater than 1.00.

82. A breathable gas mask arrangement as in claim 81, and further including a spring engaged between the mask shell and the piston to apply a retracting force between the mask shell and the piston.

83. A breathable gas mask arrangement as in claim 82, wherein the mask shell includes a stop portion for engaging the piston to limit axial movement of the piston.

84. A breathable gas mask arrangement as in claim 83, wherein the ratio of A_g/A_c is in a range of 1.50 – 4.00.

85. A breathable gas mask arrangement as in claim 81, wherein the ratio of A_g/A_c is in a range of 2.00 – 4.00.

86. A breathable gas mask arrangement, comprising:

a mask shell having a portion adapted to receive a supply of pressurized breathable gas and a user side;

a gusset portion having a first side attached to the user side of the shell and having a second side;

a cushion having a first portion constructed and arranged to attach to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask arrangement and the user's face; and

a headgear constructed and arranged to attach the mask shell to the user;

wherein, the gusset portion is constructed and arranged such that it can expand and contract to alter a distance between the mask shell and the cushion, an interior of the gusset portion being exposed to the supply of pressurized breathable gas and having a projected area on the user's face A_g which is greater than an area A_c of contact of the cushion with the user's face such that the supply of pressurized breathable gas acting on the area A_g provides a component of a contact force F_c of the cushion on the user's face, and a ratio of A_g/A_c is greater than 1.00, the gusset portion including a sidewall having a thickened cross-section at a base of the sidewall.

87. A breathable gas mask arrangement as in claim 86, wherein the thickened portion has a generally uniform thickness.

88. A breathable gas mask arrangement as in claim 87, wherein the ratio of A_g/A_c is in a range of 1.50-4.00.

89. A breathable gas mask arrangement as in claim 86, wherein the gusset portion includes a sidewall having a cross-sectional thickness tapering from a thickened base portion to a thinner portion.

90. A breathable gas mask arrangement as in claim 89, wherein the ratio of A_g/A_c is in a range of 1.50 – 4.00.

91. A breathable gas mask arrangement, comprising:

a mask shell having a portion adapted to receive a supply of pressurized breathable gas and a user side;

a gusset portion having a first side attached to the user side of the shell and having a second side;

a cushion having a first portion constructed and arranged to attach to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask arrangement and the user's face;

a headgear constructed and arranged to attach the mask shell to the user; and

a generally rigid backstop attached to the mask shell for contacting a first sidewall portion of the gusset portion to limit movement of the first sidewall portion;

wherein, the gusset portion is constructed and arranged such that it can expand and contract to alter a distance between the mask shell and the cushion, an interior of the gusset portion being exposed to the supply of pressurized breathable gas and having a projected area on the user's face A_g which is greater than an area A_c of contact of the cushion with the user's face such that the supply of pressurized breathable gas acting on the area A_g provides a component of a contact force F_c of the cushion on the user's face, and a ratio of A_g/A_c is greater than 1.00.

92. A breathable gas mask arrangement as in claim 91, wherein the generally rigid backstop extends around substantially an entire periphery of the gusset portion.

93. A breathable gas mask arrangement as in claim 92, and further including a generally rigid second backstop attached to the mask shell for contacting a second sidewall portion of the gusset portion to limit movement of the second sidewall portion.

94. A breathable gas mask arrangement as in claim 93, wherein at least one of the backstop and the second backstop are indirectly attached to the mask shell.

95. A breathable gas mask arrangement as in claim 92, wherein the ratio of A_g/A_c is in a range of 1.50 – 4.00.

96. A breathable gas mask arrangement as in claim 91, wherein the ratio of A_g/A_c is in a range of 2.00 – 4.00.

97. A breathable gas mask arrangement, comprising:

a mask shell having a portion adapted to receive a first supply of pressurized breathable gas and a user side;

a gusset portion having a first side attached to the user side of the shell and having a second side;

a cushion having a first portion constructed and arranged to attach to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask arrangement and the user's face; and

a headgear constructed and arranged to attach the mask arrangement to the user;

wherein, the gusset portion is constructed and arranged such that it can expand and contract to alter a distance between the mask shell and the cushion, the gusset portion having a flexible sidewall with a cross-section enclosing a gusset chamber having an interior volume separated from an interior of the mask shell, the sidewall having at least one port connecting the gusset chamber to a second supply of pressurized gas.

98. A breathable gas mask arrangement as in claim 97, wherein the pressure of the second supply of pressurized gas is maintained at a different pressure than the pressure of the first supply of pressurized breathable gas during at least a portion of a treatment therapy.

99. A breathable gas mask arrangement as in claim 98, wherein the pressure of the second supply of pressurized gas is controlled in relation to the pressure of the first supply of pressurized breathable gas during at least a portion of a treatment therapy.

100. A breathable gas mask arrangement as in claim 98, wherein the pressure of the second supply of pressurized gas is controlled independently of the pressure of the first supply of pressurized breathable gas during at least a portion of a treatment therapy.

101. A breathable gas mask arrangement as in claim 97, wherein the gusset chamber has a generally circular cross-section.

102. A breathable gas mask arrangement as in claim 97, wherein the gusset chamber has a generally diamond shaped cross-section when the mask is not in use that balloons to a generally circular cross-section when the gusset chamber is connected to the second supply of pressurized gas.

103. A breathable gas mask arrangement as in claim 97, wherein the mask shell includes a port therethrough integrally molded with the mask shell and interconnecting the sidewall port to the second supply of pressurized gas.

104. A mask cushion for sealingly connecting a breathing mask to a wearer's face, the cushion comprising:

a sidewall having an axially outer edge;

a flexible membrane attached to the sidewall, the membrane having a face contacting portion extending axially to a position beyond the axially outer edge of the sidewall and constructed and arranged to move axially between the extended position and a retracted position where the axially outer edge of the sidewall contacts the wearer's face to limit further axial movement of the flexible membrane.

105. A mask cushion as in claim 104, wherein the axial movement of the face-contacting portion of the flexible membrane is substantially provided by the flexibility of the flexible membrane.

106. A mask cushion as in claim 105, wherein the flexible membrane is attached to the sidewall at a position axially inward from the axially outer edge and a portion of the flexible membrane extends axially outwardly alongside a portion of the sidewall.

107. A mask cushion as in claim 106, wherein the sidewall is at least partially hollow to increase flexibility of the sidewall.

108. A mask cushion as in claim 107, wherein the sidewall is at least partially hollow between the attachment position and the axially outer edge.

109. A mask cushion as in claim 104. and further comprising a flexible connecting member connecting the flexible membrane to the sidewall, the flexible connecting member allowing relative axial movement between the flexible membrane and the sidewall.

110. A mask cushion as in claim 109, wherein the flexible connecting member has a convoluted cross-section.

111. A mask cushion as in claim 109, wherein the flexible connecting member is attached to the sidewall at a position axially inward from the axially outer edge and a portion of the flexible membrane extends axially outwardly alongside a portion of the sidewall.

112. A mask cushion as in claim 111, wherein the flexible connecting member has a convoluted cross-section.

113. A mask cushion as in claim 111, wherein the sidewall is at least partially hollow to increase flexibility of the sidewall.

114. A mask cushion as in claim 113, wherein the sidewall is at least partially hollow between the attachment position and the axially outer edge.

115. A mask cushion as in claim 109, wherein the sidewall is at least partially hollow to increase flexibility of the sidewall.

116. A mask cushion as in claim 115, wherein the sidewall is at least partially hollow between the attachment position and the axially outer edge.

117. A mask cushion as in claim 104, wherein the sidewall is at least partially hollow to increase flexibility of the sidewall.

118. A mask cushion as in claim 117, wherein the sidewall is at least partially hollow between the attachment position and the axially outer edge.

119. A mask cushion as in claim 118, and further comprising:

a mask shell; and

a headgear for attaching the mask shell to the wearer's head;

wherein the cushion is attached to the mask shell for sealingly connecting the mask shell to the wearer's face.

120. A mask cushion as in claim 104, and further comprising:

a mask shell; and

a headgear for attaching the mask shell to the wearer's head;

wherein the cushion is attached to the mask shell for sealingly connecting the mask shell to the wearer's face.

121. A mask cushion as in claim 109, and further comprising:

a mask shell; and

a headgear for attaching the mask shell to the wearer's head;

wherein the cushion is attached to the mask shell for sealingly connecting the mask shell to the wearer's face.

122. A mask cushion as in claim 104, wherein the flexible membrane is attached to an interior of the sidewall and is in the shape of an inwardly curved rim.

123. A mask cushion as in claim 109, wherein the flexible membrane is attached to an interior of the sidewall and is in the shape of an inwardly curved rim.

124. A mask cushion as in claim 120, wherein the flexible membrane is attached to an interior of the sidewall and is in the shape of an inwardly curved rim.